The Causes of Fiscal Transparency: Evidence from the American States

James E. Alt
Harvard University

David Dreyer Lassen
University of Copenhagen

Shanna Rose
SUNY Stony Brook

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James E. Alt

Department of Government, Harvard University

David Dreyer Lassen

Department of Economics, University of Copenhagen

Shanna Rose

Department of Political Science, SUNY Stony Brook

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Abstract: We use unique panel data on the evolution of transparent budget procedures in the American states over the past three decades to explore the political and economic determinants of fiscal transparency. Our preliminary results suggest that more equal political competition and power sharing are associated with both greater levels of fiscal transparency and increases in fiscal transparency during the sample period. Political polarization is associated with lower transparency, and past fiscal conditions also appear to affect the level of transparency.

1. Introduction

From a policy perspective, government transparency has been an integral part of attempts to reform public sector governance since at least the early 1990s. Broadly defined, government transparency is the overall degree to which citizens, the media, and financial markets can observe the government's strategies, its actions, and the resulting outcomes. In this paper we focus on one important aspect of transparency: fiscal (or budget) transparency. Fiscal transparency is now an integral part of public sector design; both the OECD and the IMF have recently implemented Codes of Best Practice for Fiscal Transparency to guide countries towards a more open fiscal policy decision process, partly in recognition of the fact that fiscal transparency does not always come about by itself. While it is sometimes possible for supranational institutions or higher-level governments to push for–or downright require–reforms of the budgetary process as a part of a stabilization package, the causes of government transparency during "budgetary peacetime" remain less well understood.

In this paper we investigate, conceptually and empirically, the determinants of fiscal transparency. There exists a fairly large literature on the effects of institutions—both fiscal and political—but very little work considers the endogeneity of such institutions. Understanding the causes of institutional change is important for two reasons: First, it will help us to determine when we can reasonably expect institutions to emerge by themselves and when outside actors are needed for institutional change to take place. Second, it will enable us to estimate the effects of institutions on policy choices and outcomes. While institutions obviously do not change as frequently as does policy, the fact that institutional change is typically deliberate in itself makes it difficult to assess the direct impact of institutions on policy. The reason is that observed

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changes in policy could be a function of past outcomes that also affect the scope and desire for institutional change, rather than a function of institutions per se.

To investigate the causes of transparency, we have collected a unique data set on transparent budget practises in the American states from 1972 to 2002. This period saw substantial changes in the degree of fiscal transparency in state government budgeting. Since we consider both a large number of cases and a measure with considerable variation, our analysis is an important improvement over existing studies of institutional change in budgetary procedures.

The next section reviews the conceptual framework that guides our empirical analysis. Section 3 offers a qualitative analysis of some interesting and important cases of reform in the US states. Section 4 describes the data and empirical specification for quantitative analysis, section 5 reports the results, and section 6 concludes and describes our next steps.

2. Theoretical framework

Institutions—fiscal or otherwise—set the stage on which political actors, voters, and markets interact. Generally, Hall and Taylor (1996, p. 939) say, "institutions affect behavior primarily by providing actors with greater or lesser degrees of certainty about the present and future behavior of other actors." The insight that institutions matter for choices and outcomes is the basis for the past two decades' increased focus on principles of good governance, of which transparency of government is a prominent part.

Increasing fiscal transparency is a way of providing voters, observers, financial markets, and sometimes politicians themselves with more information about the intentions behind fiscal policy, the actual actions taken, and the immediate and longer-term consequences of specific policies. This eases the task of forecasting future fiscal policy, and of attributing fiscal outcomes

to policies, and fiscal policies to particular politicians. A comprehensive definition of fiscal transparency is given by Kopits and Craig (1998, p.1):

> "Fiscal transparency is defined … as openness toward the public at large about government structure and functions, fiscal policy intentions, public sector accounts, and projections. It involves ready access to reliable, comprehensive, timely, understandable, and inter-nationally comparable information on government activities … so that the electorate and financial markets can accurately assess the government's financial position and the true costs and benefits of government activities, including their present and future economic and social implications."

There are literatures that analyze the consequences of transparency in government,[1] international organizations, monetary policy making, and fiscal policy, which is our focus in this paper. The next section reviews this literature, while the following section turns to the causes of transparency.

Imperfect information and agency models

Transparency is an issue only when there is imperfect information. According to Geraats (2002, 2005), transparency can have both information and incentive effects. In a simple sense, more transparency means "more information transmitted." This is generally beneficial, for a variety of reasons including (Posen 2002): trust,[2] predictability,[3] reduced noise in markets,[4]

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[1] Petrie (2003) provides thoughtful suggestions on how to make the implementation of transparency reform more effective.
[2] Trust increases when transparency means "tell them what you're going to do." If a politician has a history of having nothing to hide, then when he needs someone to take something on faith, he is more likely to get it. Transparency reassures people that he has not abandoned long-term goals, which could give him greater flexibility.
[3] Greater disclosure makes your actions more predictable when transparency means "give them details and justifications."
[4] In the political market, voters get a clearer view of performance, and can make more effective use of votes. In financial markets, participants are not misled and risks are reduced (see Glennerster and Shin n.d.). Generally better observability is welfare-improving, as it reduces transaction costs in the broadest sense.

credibility, and coordination.[5] Of course, the information effect faces tradeoffs between the value

of sunlight and the danger of over-exposure (Heald 2003). Tradeoff arguments suggest that "too

much" transparency produces excessive "politicization." If information is revealed to third-

parties who use it harmfully, increasing transparency can be bad.[6] Finally, if not keeping explicit

promises is costly, then transparency might lead politicians to keep promises when not doing so

might be better.

Several authors examine the effects of transparency in the context of imperfect

information models. Milesi-Ferretti (2004) develops a reduced form model that allows him to

investigate the interactive effects of transparency and fiscal rules, such as those imposed by

members of the European Union under the Maastricht Treaty of the 1990s. He assumes that

politicians are myopic (perhaps due to the positive probability of being replaced in the next

election), and therefore prefer to run larger deficits than the public would like. He finds that, in

this context, transparency affects politicians' responses to fiscal rules: under high transparency,

rules induce politicians to make the real fiscal adjustments needed to bring the budget into

balance, while under low transparency such rules simply encourage "creative accounting."

In another line of inquiry, using the probabilistic voting model of Lindbeck and Weibull

(1987), Gavazza and Lizzeri (2005) investigate the effect of transparency on competition among

different groups of voters who value targeted transfers. Where competing parties engage in pre-

electoral competition, transparency on the expenditure side of the budget is welfare improving,

while transparency solely on the revenue side can result in lower welfare as it reduces the

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[5] Lowry and Alt (2001) provide such an interpretation of balanced budget rules, conditional on market behavior. In
monetary policy, an incumbent wishing to be seen to fight inflation can do so more effectively if the standard for
what will count as fighting inflation is unambiguous.
[6] In this way, "harmful" competition advantages secret voting (Dal Bo 2005).

marginal political costs of offering wasteful transfers. We return to this distinction in the empirical section by separately examining the causes of expenditure and revenue transparency.

However, unlike these two papers, most work on transparency in political economics has taken place within a class of models known as political agency models, due to Barro (1973) and Ferejohn (1986). These models adapt the principal-agent framework, in which the agent is better informed than the principal, to a political setting such that voters, as principals, elect politicians who, as agents, make policy choices that affect voters. For an application to fiscal policy, see Persson, Roland and Tabellini (1997).[7] A direct focus on transparency, interpreted as the degree to which voters can observe characteristics of or actions taken by the agent, is not common, but we return to examples below.

In a political agency model combining adverse selection and moral hazard, Besley (2005) and Besley and Smart (2003) show that increasing transparency has two countervailing effects on voter welfare. On the one hand, increasing transparency allows voters to better screen good politicians from bad ones. On the other hand, greater transparency at the same time disciplines politicians in their rent-seeking, which makes it harder for voters to distinguish good politicians from bad ones. The net result on the quality—and turnover—of incumbents is ambiguous. In Alt and Lassen (2006a), politicians do not seek rents for personal gain; rather, the politician's concern for re-election is driven by a desire to implement policy. Therefore, the disciplining effect disappears and transparency unambiguously increases voter welfare through improved screening.

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[7] For a different asymmetric information model applied to fiscal policy, see Rogoff (1990). Geraats (2002) analyzes transparency in a signaling model where the incentive effects of transparency are sometimes set against the effects of inflation fighters' reputations.

Prat (2005) considers a distinction, introduced by Ferejohn (1999; see below), between the effects of transparency on consequences and actions.[8] In Prat's (2005) career concerns model, where both voters and the politician are uncertain about the politician's type, improving the transparency of consequences is always beneficial to voters, but more information about the agent's actions can be detrimental if it causes the agent to disregard private informative signals with an aim of appearing in a certain way to the public. The same idea motivates Morris and Shin's (2000) treatment of transparency in monetary policy.

Empirical results on the effects of transparency on fiscal policy come from Shi and Svensson (2002), Besley and Prat (2006), Alt and Lassen (2006a,b), Besley (2005). All model transparency within a political agency framework, where electoral promises are non-enforceable and voting is retrospective. Voters hold incumbents accountable for their policy choices in the previous period, and transparency alleviates informational asymmetries between voters and politicians. The precise effects of transparency depend on the issue under consideration, but the main conclusions of this literature are that increasing transparency reduces debt accumulation and the scope for generating political budget cycles. A separate, empirical literature has investigated the effects of transparency on financial markets. Glennerster and Shin(n.d.) find that higher transparency lowers borrowing costs in sovereign debt markets, and Gelos and Wei (2005) find that emerging market funds invest less in less transparent countries.

Models of endogenous transparency

Although empirical studies have uncovered evidence that transparency has some welfare-improving effects, the theoretical literature also suggests that the effects of transparency (and, therefore, for our purposes, perhaps the causes as well) are not always beneficial to voters.

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[8] See also Stavasage (2004) and Fox (2005).

However, even if fiscal transparency were unambiguously desirable from the public's point of view, it would still be the case, as noted by Alesina and Perotti (1996, p. 403), that "… politicians typically do not have an incentive to adopt the most transparent practises," since doing so decreases their informational advantage over markets and voters—an advantage useful for political and re-election purposes. Why might politicians dislike transparency? As suggested in the foregoing discussion of the literature, there are many possible reasons: rent-seeking politicians are afraid of being disciplined; bad politicians are afraid of being distinguished from good politicians; re-election-minded politicians are afraid they won't be able to generate political business cycles; myopic politicians are afraid they won't be able to run bigger deficits than the public wants. For politicians, these factors militate against increasing transparency, and might even motivate decreasing transparency.

Although politicians may not have incentives to increase transparency, it nevertheless does sometimes happen, even at the national level, and even in the absence of outside pressure. Thus, the question arises: under what circumstances will politicians implement more transparent budget procedures? We explore two broad sets of explanatory factors: the *political setting* and the *fiscal environment*. We look as well at the interaction between the two, since different factors can pull in different directions and institutional change can depend on which dominates at a particular time. We look first in some detail at the political setting, and then turn to the fiscal environment.

Political setting. The political setting can influence the demand – or lack thereof – for fiscal transparency in a number of ways. First, there are what we call *partisan* changes in transparency. These occur when incumbent politicians change the degree of transparency in order to further a specific partisan goal, such as an increase or decrease in the size of the public

sector. Then there are *non-partisan* changes, which can arise for a number of different reasons. Sometimes non-partisan changes take place when pressure for reform arises from within the bureaucracy. They can also reflect attempts to accommodate financial markets, or in a broader context, supranational institutions. Most importantly for our analysis, non-partisan changes can arise when the political context, described by levels of political competition and polarization, provides current politicians with incentives to change transparency, independent of their partisan goals. An important feature of these political but non-partisan goals is the desire of some set of politicians to tie other politicians' hands—whether the others are potential successors or other incumbents contemporaneously sharing power. Finally, other features of the institutional setting, such as term limits or fiscal rules, can influence the decision to change transparency.

In the theoretical literature described above, the degree of transparency is given as a parameter determined outside of the model, before the economic and political choices of interest are taken. Only one contribution known to us (Ferejohn 1999) explicitly considers the "constitutional choice" of an information structure. Ferejohn introduces into a political agency model the degree of transparency, modelled as the precision of a signal of the incumbent's action, which is chosen by the incumbent before a typical period begins. In his model, voters—as principals—will, under certain parameter restrictions, allocate a larger part of their resources to the agent—the public sector—when they receive a more precise signal of the political agent's action.

Ferejohn's model implies that politicians who wish to increase the size of the public sector should increase transparency so as to make voters trust them with more resources. Evidence that, in the American states, Democrats' preferred level of spending is greater than that of Republicans (Alt and Lowry 2000) suggests that partisan changes in transparency will be

driven by Democratic incumbents hoping to increase the size of government. Alternatively, a party that has *already* increased fiscal scale could offer more transparency to reduce the electoral retribution caused by overspending. Because this should only happen when a party has increased spending beyond the desires of its supporters, it would seem more likely to happen under Republican incumbents. That is, if Republican voters are hurt more by levels of spending beyond their desired level, then for a *given level* of overspending, we should expect to see Republican politicians increase transparency more.

An alternative, non-partisan[9] view of the constitutional choice of transparency is based on the logic of strategic institutional design. Alt and Lassen (2006a) argue that transparency reform is closely analogous to delegation to an independent judiciary. Consider Hanssen's (2004) delegation model, in which two parties compete for office and the incumbent faces an exogenous risk of replacement by the opposing party. The incumbent can choose to delegate policy choice to an independent institution, the judiciary. By doing so, the incumbent risks the possibility that the judiciary will make a decision that will favor the opponent; however, if the risk of replacement—and with it the risk of an adverse policy choice—is sufficiently large, the latter consideration outweighs the former and the politician will favor delegation.

Similarly, an incumbent who is considering maintaining a low-transparency regime trades off the probability of remaining in office and enjoying the informational advantages afforded by low transparency against the risk of being replaced by an opponent who, if elected, would use a low transparency regime to pursue his own, opposing political goals. If the incumbent instead chooses high transparency at the constitutional stage, he ties his own hands, but also those of his potential successor. If the probability of being replaced is large, the expected benefits of restricting the opponent outweigh the costs of restricting himself, whereas if he is

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[9] We use "non-partisan" to indicate behavior that might be partisan but would be equally likely under either party.

likely to be reelected, the expected benefits from increasing transparency are small. Thus, our testable hypothesis is that the level of fiscal transparency increases with political competition.[10] As discussed below, we measure competition in a variety of ways.

Incumbents might want to tie the hands of not only their potential successors but also other politicians with whom they contemporaneously share policy-making authority. Indeed, power-sharing among incumbents simply reflects another variety of political competition. This form of competition is clearly more palpable under divided government (in which different parties control different branches of government) than under unified government (where the same party controls both branches). Therefore, one might expect to see increases in transparency where divided government tends to prevail.

In addition to the probability of being replaced by (or the need to share power with) the opposing party, the degree of political polarization can also affect the trade-off politicians face in choosing the level of transparency. This can work in two directions. First, following from Hanssen, increased political polarization can raise the cost of being replaced by the other party, if it means that opponents in low transparency environments will choose policies that incumbent politicians particularly dislike. This suggests that, for a given level of political competition, increasing transparency becomes more attractive. In other words, polarization increases the benefits of tying the hands of a partisan adversary—which suggests that reform could result from the interaction of divided government and high polarization. Second, and alternatively, it could be the case that some sort of agreement is needed in order for reform to take place. This possibility is reflected in the hypothesis of North (1990, p. 191) that "political institutions constitute *ex ante* agreements over cooperation among politicians." If this is true, a more

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[10] Alt and Lassen (2006a) find support for this hypothesis in a cross-section of advanced OECD economies for the 1990s. They use this, and a measure of legal origin (common vs. civil law), to instrument for transparency in an analysis of the effects of transparency on government debt.

polarized polity could be a hindrance, rather than a catalyst, to transparency. We will examine this issue empirically.

Finally, we will investigate the impact of term limits on transparency. While some previous research on fiscal policy in the American states (Besley and Case 1995) suggests that lame duck governors behave differently from governors who can stand for re-election, for us, the question is simpler. Term-limited incumbents cannot serve a future term in which they could derive more rents from an increased public sector and therefore—in Ferejohn's model—have little incentive to introduce reforms increasing transparency. Outside of Ferejohn's model, if elections have "selection effects,"[11] then in states without term limits, incumbents who have served longer are more likely to be good types. If good types are more likely to increase transparency (because they have less to hide than bad types), then reforms increasing transparency should arise at some point (probably earlier) in the incumbencies of politicians who eventually served many terms.

Economic environment. Along with political factors, fiscal policy outcomes can also influence politicians' incentives to implement more transparency in the budgeting process. Historically, fiscal institutions often have been implemented or reformed following periods of fiscal distress.[12] In particular, if a lack of transparency in the budget process contributed to a negative fiscal shock, an appropriate response would be to increase transparency. In New Zealand, wide ranging fiscal reform was implemented in the 1990s when a new incumbent took power to find a big undisclosed fiscal obligation (Campos and Pradhan 1999). Substantial stabilization packages, and in some cases bail-outs, are often accompanied by reforms, either as

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[11] That is, if, as in a standard agency model with adverse selection, there are good and bad types of incumbents and elections help voters pick out the good ones (see Fearon 1999).
[12] For example, the introduction of balanced budget rules in the 19th century took place as a result of fiscal crises following from the construction of canals (Heckelman et al 1999).

required by outsiders or as a consequence of political turnover. Such reforms are not in the political interest of the incumbent(s) responsible for the negative shocks if they help voters attribute the bad outcomes to them. On the other hand, to the extent that transparency leads voters to attribute a newly improved fiscal situation to current politicians, it may be optimal for politicians expecting good fiscal records to increase transparency. There is a tradeoff here between the incumbent's fear that voters will punish him for the crisis and the desire to get credit for shaping up, even at a cost of other foregone opportunities.

In addition to fiscal crises and budget imbalances, we also explore the consequences of unexpected changes in the size of government. Above, we argued that in the Ferejohn model the size of government is related to the level of transparency in political equilibrium, possibly conditional on the party of the incumbent (Alt and Lowry 2000). This means that *unexpected* changes in the scale of government, again conditional on party, can induce change to restore political equilibrium. While policy makers will often find themselves at an informational advantage relative to voters, low transparency can also imply that both voters *and* politicians have incomplete information about the state of public finances. Thus, unexpected changes, both positive and negative, can come about as a result of lack of information as well as deliberate choice on the part of politicians.[13] If public finance decisions have been made in a low information environment, then surprises can be the impetus to change the fiscal policy making process, including fiscal transparency. This implies that unexpected changes in public finances should precede reform.

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[13] Improving the quality of information available to decision makers, for example through better fiscal data, is a key goal of the IMF's effort to increase transparency, in particular for developing and emerging economies (Petrie, 2003; IMF, 2003).

In the next section, we investigate the causes of transparency in four case studies. We then turn from qualitative to quantitative analysis, with an empirical study of transparency in all fifty states.

3. Four Cases of Reform

Four states experienced "bursts" of reform sometime during our sample period—that is, they made significant progress toward increasing transparency within a relatively short time frame. Specifically, these states' scores on our nine-point transparency index increased by at least three points over a period of five years or less. The states—and the periods during which their reform bursts took place—are Delaware (1978-1980), North Carolina (1991-1995), Rhode Island (1990-1991), and Wyoming (1993-1997). This section explores the political and economic circumstances surrounding these states' reforms.

Delaware was among the states hit hardest by the national recession of 1973-1975. By January 1977, when Republican Governor Pete du Pont took office, its unemployment rate had reached an all-time high of 8.2 percent and the state's finances were in a shambles (Bureau of Labor Statistics 2005). Du Pont's election followed a period of unusually high party turnover in the governor's office, compared to the state's historic tendency to elect Republican governors. Both chambers of the legislature were newly under Democratic control, having been controlled by the Republican party during the previous decade, and by Democrats during the decade before that.

> In 1977, the state was trying to recover from two previous administrations that had brought it to the brink of fiscal disaster. When Governor Pete du Pont found resistance to efforts at change, he decided to throw a serious scare into the legislature, the rating agencies and the citizenry by telling everyone that as far as he was concerned, Delaware was virtually bankrupt (*Governing* 2005).

That year, Governor du Pont issued an executive order calling for the creation of Delaware's

Economic and Financial Advisory Council (DEFAC), an independent, nonpartisan group of

public and private sector experts charged with forecasting revenues. Since its inception,

DEFAC's revenue forecasts have been accepted without question by both the executive and

legislative branches, and the council has been widely credited with helping Delaware to weather

subsequent recessions better than many other states. State Treasurer Jack Markell attributes

DEFAC's continuing success to the memory of the fiscal crisis: "It helps a lot that the state went

through what it went through 30 years ago" (*Governing* 2005).

At the time of North Carolina's 1990-1991 budget crisis, Republican James Martin had

just been re-elected governor by a state that had, up until that point, almost always elected

Democratic governors; the legislature, however, was firmly controlled by the Democratic Party,

as it had been for many decades.

> In 1991, North Carolina's fiscal problems grew to a crisis level. The state began
> the year with a $222 million General Fund balance and ended it with $400,000.
> To address its severe fiscal crisis, the General Assembly was forced to reduce and
> restrict hiring and operating expenditures, defer capital projects, draw down
> reserves, reduce non-recurring expenses, increase taxes by $637 million, [and] cut
> expenditures by $576 million (GPAC 1992).

"As a consequence of fiscal pressures," the Democratic legislature in 1991 commissioned the

newly-created Government Performance Audit Committee (GPAC) to conduct a year-long

performance audit to identify ways to "reduce the costs of program service delivery and…

strengthen the financial planning, budgeting, and management systems" (GPAC 1992). The

Committee—consisting of the leadership and select members of the House and Senate, the State

Auditor, and several private sector leaders—together with accounting firm KPMG Peat Marwick

made several recommendations to the government of North Carolina, among them performance

budgeting, which were subsequently implemented by the government.

In the early 1990s, Rhode Island was, like North Carolina, in the midst of a major fiscal crisis. The state was experiencing its largest deficit since the Great Depression, as well as the biggest government scandal in the state's history: the failure of Rhode Island Share and Deposit Indemnity Corporation (RISDIC), the organization that insured the state. The governor at the time—Edward DiPrete—was the first Republican elected to that office in nearly two decades. Diprete was unpopular; at one point his job approval rating dipped as low as 16 percent (and after leaving office he was indicted for extortion and accepting bribes). Among other things, DiPrete was widely blamed for a budget process that was "political and inefficient," according to Gary Sasse of the Rhode Island Public Expenditure Council, the state's most prominent watchdog group. The legislature at the time was, as usual, controlled by Democrats. A Democratic legislator named Paul Crowley successfully introduced legislation proposing binding consensus revenue forecasting. The forecasting process is widely believed to have improved dramatically since then—it is less political and produces more realistic revenue forecasts, according to Mr. Sasse.[14]

While Wyoming's legislature has long been a Republican stronghold, the state has seen frequent party turnover in the governor's office over the past fifty years. At the time of the 1990-1991 recession and fiscal crisis, the governor was Democrat Mike Sullivan. In the wake of the crisis, a bipartisan, inter-branch consensus emerged that the state needed to reevaluate and improve its budget process, according to Fiscal Administrator Mike McVay. In 1994, Republican legislator and gubernatorial hopeful Jim Geringer submitted legislation calling for a new system that would use performance measures to link public spending to outcomes. Geringer went on to win the governorship, returning the state to unified Republican control in 1995. As

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[14] Around the same time, Rhode Island took many other steps to open up the legislative process to public scrutiny. For a summary of these reforms, see http://www.rilin.state.ri.us/studteaguide/RhodeIslandHistory/chapt9.html

Governor, he oversaw the implementation of performance budgeting and continued to be a strong advocate of the new approach, despite growing resistance from the legislature. According to a legislative source who wished to remain anonymous, "the legislature has basically said 'we're not having any part of this.' They want an appropriations process that focuses on the nuts and bolts of spending, down to the number of paper clips"—that is, the line-item format with which they had grown familiar. Mr. McVay concedes that the state, under the new administration of Democratic Governor Dave Freudenthal, is still "fine-tuning" the process.

In summary, several common themes emerge from these states' experiences: in all four cases, measures to increase transparency were adopted in response to recession-induced fiscal crises, during periods of divided government, following periods of high party turnover in the governor's office. Interestingly, legislative turnover was virtually nonexistent in three of the four states. In some cases, the new measures seemed to reflect a consensus among policy-makers, while in other cases one party or branch of government – not necessarily the same one in each case – clearly imposed reforms on the other.

4. Data and Empirical Method

Our transparency measure for state government budget procedures is based on that of Alt, Lassen and Skilling (2002). Using cross-sectional data for the 1990s from the National Association of State Budget Officers and the National Conference of State Legislatures, the authors code nine dichotomous budget procedures and create an index equal to the number of items for which each state had the more transparent procedure.[15] The nine items are:

1. Is the budget reported on a GAAP (Generally Accepted Accounting Principles) basis? (Yes = more transparent, since shared language facilitates communication)

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[15] Alt and Lassen (2006a) presents a transparency index based on similar principles for nineteen OECD countries.

2. Are multi-year expenditure forecasts prepared? (Yes = more transparent, since more information about plans and the expected consequences of action is disseminated)

3. What is the frequency of the budget cycle? (Annual = more transparent than biennial, since more frequent action means more up-to-date information)

4. Are the revenue forecasts binding? (Yes = more transparent, since binding estimates increase the costliness of being misleading)

5. Does the legislative branch have (or share) responsibility for the revenue forecast? (Yes = more transparent, since legislative or consensus forecasts involve more officials, reducing the likelihood that estimates are misleading or manipulative)

6. Are all appropriations included in a single bill? (Yes = more transparent, since a single location facilitates monitoring)

7. Does a nonpartisan staff write appropriations bills? (Yes = more transparent, because these staff have less partisan incentive to be misleading)

8. Is the legislature prohibited from passing open-ended appropriations? (Yes = more transparent, because published figures will be closer to ultimate outcomes)

9. Does the budget require published performance measures? (Yes = more transparent, because these create more explicit standards and information for judging politicians' actions)

In this study, we extend the data back in time in order to construct a panel on budget transparency. We have collected a unique data set, comprised of survey responses to a questionnaire sent to the budget officers of all fifty states, to construct an annual score for each year between 1972 and 2002. We focus on the 48 mainland states for the period 1976-1999 (due to the inclusion of four year lags, see below), in total 1152 cases. We could not reconstruct the nine-item scale for all states in all years: 176 of the 1152 cases (15.3%) are missing one data item, 59 cases (5.1 %) are missing two items, and 12 cases (1.0 %) are missing three items. No case is missing more than three items. We code our transparency variable as the ratio of items scored = 1 to total items answered. Figure 1 shows the histogram for our 1152 cases. The distribution is unimodal, with a median of 0.444 (4/9).

Figure 1

Fiscal Transparency scores, 1976-1999 (n = 1152)
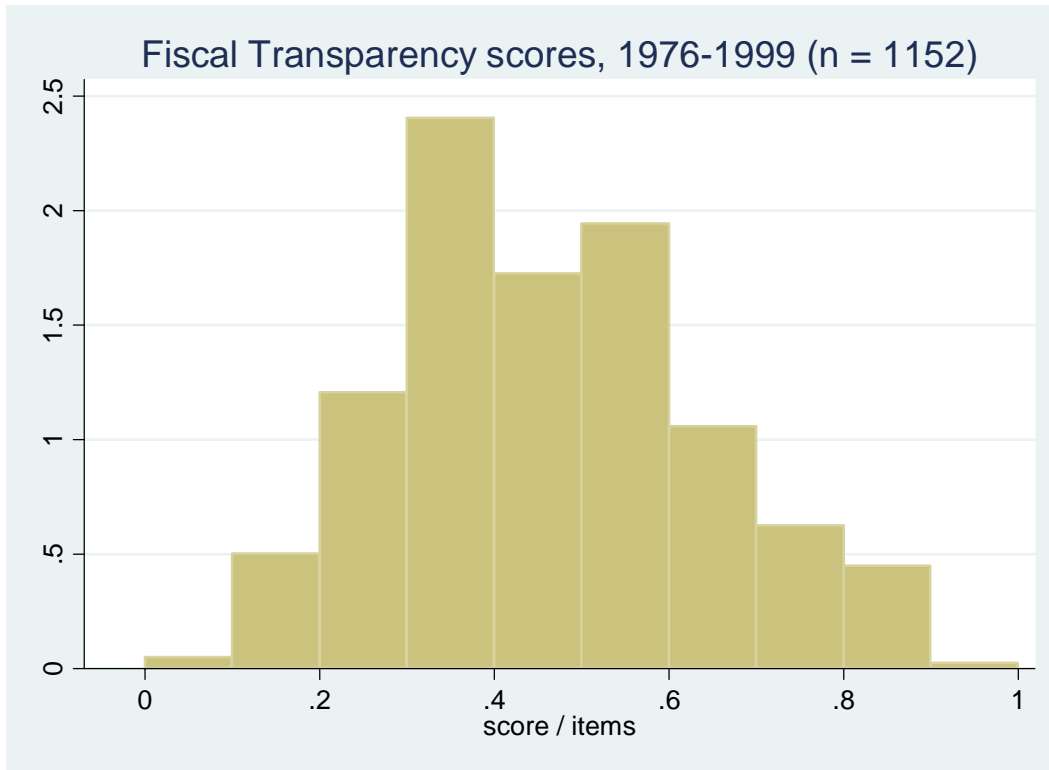
In some cases, a change in the transparency index reflects a change in the number of reported items, rather than an actual change. This would be the case, for example, if the respondent did not know the status for a particular year for a particular item. Excluding such cases does not change the impression of Figure 1 and, below, we demonstrate that the statistical results also are unaffected by this.

Figure 2 shows the evolution of transparency in the fifty states from 1972 to 2002. Most states saw some changes in the degree of fiscal transparency over the three decades. Some states saw quite substantial increases in transparency, some of which we will investigate in case studies, while seven states did not change their degree of transparency at all during the period. On average, budget transparency increased from a cross-state average of 0.41 in 1972 to 0.54 in

2000. There was essentially no change in annual average scores until the early 1980s when an

upward trend began and later intensified during the 1990s.

Figure 2: Fiscal transparency in American States, 1972-2002

Graphs by State
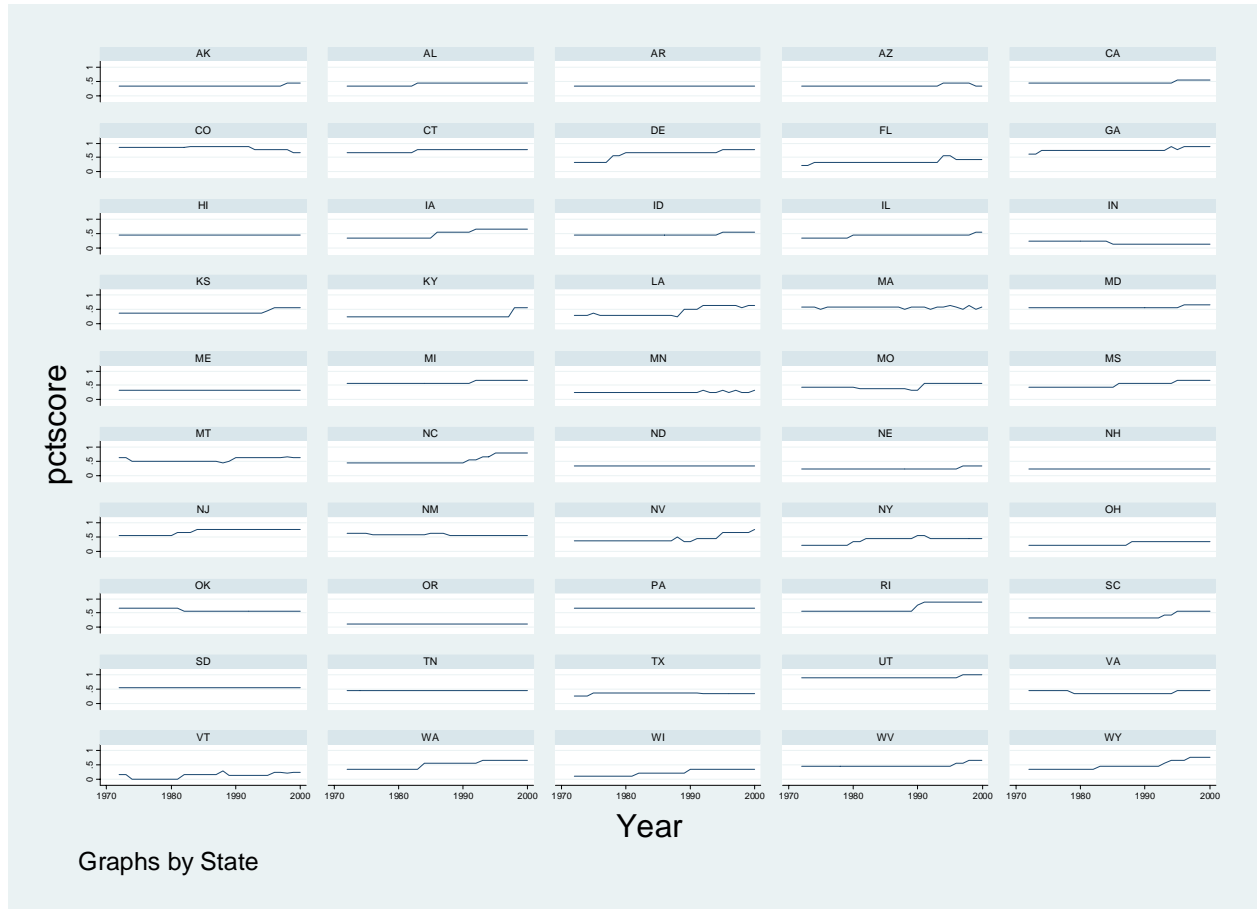
Our main explanatory variables are various measures of political competition in the

states. A cursory look at the literature suggests that there exists no single agreed-upon measure of

political competition. Therefore, in our empirical analysis, we utilize several different measures:

(1) divided government, which is a dichotomous variable equal to one if different parties control

the executive and legislature[16] (2) gubernatorial competition, as measured by the share of

Democratic votes in the gubernatorial election, folded such that the index captures absolute

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[16] If control of the legislature is split between parties, we code the case as divided government. This makes no difference to our results.

deviations from one half (3) legislative competition, as measured by Besley and Case (2003) as the (folded) Democratic seat shares in the upper and lower houses; we call this "legislative competition" in the tables below.[17]

To measure political polarization within a state, we follow Hanssen (2004) in using measures of ideology based on roll-call voting in the U.S. Congress, as no comparable data on political polarization at the state level exists. The data are taken from Poole and Rosenthal (1997). The authors estimate the positions of members of Congress along two dimensions. Like Hanssen (2004), we use the first of these, the liberal-conservative axis, to calculate average ideology scores for each state's members of Congress. For each year and state, we measure policy distance by the absolute difference between average ideology scores.

Fiscal variables and additional socio-economic controls are completely standard, except for the operationalization of government scale. Below, we employ two different measures of scale, one based on general revenues – annualized, in real per capita terms – and one which includes a distinction between expected and unexpected fiscal scale. Expected fiscal scale is the average sum of general revenues (less federal intergovernmental transfers) and general spending as a percentage of personal income during the most recent four-year period when the same party as the current incumbent controlled the executive. Unexpected scale is simply the difference between general revenues plus spending as a percentage of income and expected scale. In other words, it is the amount by which current levels of revenues and spending relative to income differ from what would be expected, given the history of the incumbent party in that state (see Lowry, Alt and Ferree, 1998).

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[17] It is defined as -1*abs(share of seats in lower house held by Democrats - .5)*abs(share of seats in upper house held by democrats - .5).

Empirical specification

We want to estimate the effect of political and economic variables on the level of the fiscal transparency index. Our basic specification is:

$$y_{st} = \alpha_s + \gamma_t + \chi p_{st} + \beta' x_{st} + v_{st}$$

where y_{st} is the level of fiscal transparency in state *s* in year *t*, α_s is a state fixed effect, γ_t is a year indicator variable, p_{st} is the measure of political competition, x_{st} comprises other political and economic variables, and v_{st} is the error term. When we estimate the model, we allow for heteroscedasticity in the error terms and always report *F*-tests based on robust standard errors.

To allow for the fact that institutional changes occur infrequently, we add to the basic model two features. First, we include a series of lags for the independent variables, so that even when the conditions for change are in place, the dynamics of the political process may delay the actual implementation of a new procedure. Specifically, we include lags from $t - 2$, and $t - 4$. Second, we also include the lagged dependent variable (at $t - 4$) on the right-hand side. While there are well known issues with the fixed-effects estimator in the presence of lagged dependent variables, we are reasonably confident that any bias is minimal as the length of the panel spans three decades. We also note (Judson and Owen, 1999) that any bias will mostly affect the coefficient on the lagged dependent variable which we include as a control, but which is not a variable of interest to us.

5. Empirical Results

We present the results of our quantitative empirical analysis in four tables. Table 1 reports results from our basic specification, Table 2 restricts the sample to states that experienced changes in the level of transparency, Table 3 introduces interaction effects between the political setting and the

fiscal situation, and Table 4 decomposes the transparency index into expenditure transparency, revenues transparency, and general transparency.

The tables report F-test statistics for (groups of) variables and their lags. We distinguish six groups of variables and their lagged values, in addition to the lagged endogenous variable: (1) political competition measures; (2) political polarization; (3) socio-demographic variables, which include population shares of young and elderly, state population and population squared, and state income per capita and income squared; (4) fiscal policy variables, including real per capita debt and revenue measures where we distinguish general revenues and measures of expected and unexpected revenues; (5) fiscal surplus; and (6) fiscal deficit. We also include, but do not report, a dummy variable for large deficits (which equals a dummy for RI in the early 1990s, and is strongly significant), and state and year fixed effects.

Table 1 reports results from the basic specification on the full data set. The table holds three pairs of results, one for each measure of political competition. Each pair of columns, in turn, reports two sets of results, one using the general revenue measure and one employing the distinction between expected and unexpected revenues; in the latter case, the number of observations decreases almost by a quarter due to the construction of those variables. The table reports F-test statistics, the corresponding p-value, and notes the sign of the aggregate effect, which is the simple sum of the (current and lagged) coefficients on the variable, by a + or – sign.

The first column of Table 1 reports the results when we use divided government as our measure of political competition. The F-test statistic value of 1.99 is the result of the joint test that $divgovt_k = 0$ for $k = t,\ t-2,\ t-4$. The test has $(3, 1015)$ degrees of freedom and the resulting p-value is 0.114. The sum of the coefficient estimates is positive, which implies that the presence of divided government increases the level of fiscal transparency, though only in a

marginally significant way. In the second column, where we employ the alternative revenue measure, divided government is significantly associated with higher transparency.[18]

[Table 1 here]

The remaining test statistics in the first column show that political polarization is associated with lower transparency. Recall that a polarization measure is available only for states represented by more than one party in Congress. States that elect only one party to Congress will, besides typically having small populations, be more polarized, everything else equal. They are represented in our analysis by a dummy variable. Both the continuous polarization measure and the dummy variable for one-party states have significantly negative effects on the degree of transparency.

In addition to the political variables, fiscal variables also matter for the adoption of fiscal transparency. The level of debt and revenues together are associated with higher transparency; however, the revenue effects are insignificant on their own (not shown) and higher debt is associated with lower transparency.[19] Finally, departures from budget balance are associated with higher transparency. Both higher surpluses and higher deficits contribute to higher transparency.

The two remaining pairs of columns report results from similar regressions where the measures of political competition are, respectively, legislative competition and gubernatorial turnover. We find, across the measures of political competition and revenue specifications, broadly similar results. Political competition tends to increase the level of fiscal transparency, which supports the idea of strategic, or "non-partisan" institutions. In state governments

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[18] Cases where expected revenues are missing are those where a party holds office for the first time, which will possibly tend to be earlier in the sample period, when reforms were relatively less common. We cannot exclude the possibility that combinations of circumstance like these have an effect on the precision of estimates.

[19] Alt and Lassen (2006a) show that in a sample of OECD countries lower transparency leads to higher debt.

characterized by high degrees of turnover or by divided government, incumbent majorities of both parties can benefit from increasing transparency as this restricts potential successors from the opposing party.

Furthermore, political polarization is associated with lower transparency, which could suggest that bipartisan cooperation on changing transparency is possible to a lesser extent when parties are polarized. The impact of fiscal policy is also the same across specifications: Deviations from budget balance are associated with higher transparency, even if deficits are not significant in some specifications. At this point we interpret this as a confirmation that politicians with good fiscal records are more likely to open the books for outsiders to see. We return to this issue below.

Table 2 reports results from the same set of regressions when we restrict the sample to those states that changed transparency at some point during the period we study. This excludes states with a constant percentage score as well as states where changes in the score reflects the in- or exclusion of particular items rather than real changes. This sample is based on 38 and 34 states for the two revenue measures, respectively.

[Table 2 here]

The results are unchanged. The effect of political polarization is slightly weaker, but the general impression is that the causes of fiscal transparency identified above are not identified by cross-state comparisons with states that did not change transparency, but, since we control for state fixed effects, are rather driven by within-state changes in our explanatory variables.

In Table 3, we report preliminary results from a specification that allows interactions between the political and the economic variables in their effect on transparency. We consider the impact of divided government on the effect of deviations from budget balance on the degree of

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transparency. For simplicity, and since the results do not depend on this, we include the absolute deviation from budget balance rather than separate measure of surpluses and deficits. We find that the presence of divided government strongly reduces the positive effects of fiscal balance on transparency. One interpretation of this result, to be explored further, is that divided government makes it less likely that, say, a governor can increase transparency under good budget outcomes to look good to observers. Conversely, divided government may delimit the ability of a government to provide a prompt institutional response to negative fiscal shocks.[20] We found no interaction between polarization and divided government. We are continuing to work on interactions between expected and unexpected revenues and political variables.

[Table 3 here]

Finally, we consider a decomposition of the transparency index into items related (primarily) to expenditures, (primarily) to revenues, and equally to both sides of the budget. The expenditure index contains items 2 (multi-year expenditure forecasts), 6 (single appropriations bill), 7 (non-partisan appropriations bill), 8 (non-open-ended appropriations), and 9 (published performance measures). The revenue index contains items 4 (binding revenue forecasts) and 5 (shared revenue forecasts), and the general index contains items 1 (GAAP) and 3 (budget cycle frequency). Table 4 reports the results for the three sub-indexes for each of the three political competition measures.

[Table 4 here]

Political competition affects the different types of transparency in different ways. While all three competition measures are associated with higher expenditure transparency,

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[20] In fact, what Table 3 shows is that, absent fiscal shocks, the effect of divided government is stronger than it appeared in Table 1. This may be because divided government is slow to respond to fiscal shocks (Alt and Lowry 1994). We will also re-examine the other competition indicators, whose effects were stronger in Table 1, for evidence of interactions.

gubernatorial turnover is negatively related to revenue transparency and legislative competition likewise negatively related to general transparency. Furthermore, the effect of political polarization also differs markedly across indexes. While it is weakly related to higher expenditure transparency, more polarized states are significantly less likely to have implemented GAAP and have an annual budget. Finally, the strong effects of budget imbalances on our main fiscal transparency index can be traced to increases in expenditure transparency, while revenue transparency is not associated with the fiscal policy setting at all. These preliminary results confirm the intuition of Gavazza and Lizzeri (2005) that revenue and expenditure transparency can be conceptually different, but the stronger results on expenditure transparency may also partly be attributable to the fact that there is more variation in that variable, as it contains five items.

6. Conclusions and implications

Only tentative conclusions can be drawn from the empirical work so far, but nevertheless both political factors and fiscal policy outcomes appear to be associated with the level of fiscal transparency. It is difficult to disentangle the causal effects of fiscal policy on transparency and vice versa, but the results of our specification, including long lags of the independent variables and lagged values of the transparency variables, together with the findings of the case studies, suggest that fiscal policy outcomes affect the level of transparency. Political competition tends to increase the level of fiscal transparency, while political polarization is associated with lower transparency. Both these results hold up across different methods of estimation as well as different definitions of variables. Moreover, fiscal imbalance, in the way of higher surpluses and

deficits, contributes to higher transparency. That relationship is less robust is the quantitative analysis, but evident in the case studies, which were designed to examine "big" cases of reform.

While these results are intriguing, there is more to do. We need to provide estimates of the magnitude effects of explanatory variables on the probability of changes in transparency. As mentioned above, we need to disentangle the effects of anticipated and unanticipated fiscal policy changes. A concern is that since transparency trends upward in our sample period, that some of the apparent causes could actually be spurious consequences of other trending series. We will also examine whether in the short run, an increase in polarization could produce divided government and thus also produce transparency, while in the long run more transparency is associated with less polarization. Finally, we have collected a panel on cable television penetration in order to estimate the relationship between demand for transparency and media consumption. In this way we hope to distinguish the effects of access to information from those of quantity, justification, and verifiability when setting up the index.

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Table 1: The Causes of Fiscal Transparency

	Dependent variable: Index percentage score = index value / # available indicators											
Political competition measure	Divided government				Legislative competition				Gubernatorial competition			
t-test: Lagged dependent variable, 4 years (p-value)	+	13.90 (.000)	+	10.08 (.000)	+	14.25 (.000)	+	10.50 (.000)	+	13.92 (.000)	+	10.03 (.000)
F-test: current and lagged political competition (p-value)	+	1.99 (.114)	+	2.97 (.031)	+	3.84 (.009)	+	2.58 (.046)	+	2.50 (.058)	+	3.30 (.020)
F-test: current and lagged political polarization (p-value)	-	4.21 (.000)	-	3.66 (.001)	-	4.35 (.000)	-	4.04 (.000)	-	4.17 (.000)	-	3.34 (.003)
F-test: current and lagged socio-demographic variables (p-value)		4.69 (.000)		4.66 (.000)		4.56 (.000)		4.61 (.000)		5.26 (.000)		5.71 (.000)
F-test: current and lagged fiscal debt and scale (p-value)		2.27 (.035)		3.10 (.001)		1.58 (.149)		2.71 (.004)		2.49 (.021)		3.31 (.001)
F-test: current and lagged fiscal surplus (p-value)	+	6.32 (.000)	+	5.47 (.001)	+	5.52 (.001)	+	4.99 (.002)	+	6.40 (.000)	+	5.96 (.001)
F-test: current and lagged fiscal Deficit (p-value)	+	3.61 (.013)	+	1.30 (.275)	+	3.34 (.019)	+	1.02 (.384)	+	3.67 (.012)	+	1.12 (.339)
Revenue measure	Gen. revenue		Expected/ Unexpected		Gen. revenue		Expected/ Unexpected		Gen. revenue		Expected/ Unexpected	
Number of observations	1127		865		1127		865		1127		865	
Years	1976-98		1976-98		1976-98		1976-98		1976-98		1976-98	

All regressions include a constant term and state fixed effects and year indicators. Calculations based on robust standard errors.
Divided government codes split legislatures as contributing to divided government.
Where applicable, +/- denotes sign of variable(s). For the case of lagged variables, this is the sign of the sum of all coefficients.

Table 2: Causes of Fiscal Transparency, excluding states without changes

	Dependent variable: Index percentage score = index value / # available indicators											
Political competition measure	Divided government				Legislative competition				Gubernatorial competition			
t-test: Lagged dependent variable, 4 years (p-value)	+	11.37 (.000)	+	8.36 (.000)	+	11.84 (.000)	+	8.94 (.000)	+	11.65 (.000)	+	8.50 (.000)
F-test: current and lagged political competition (p-value)	+	2.27 (.079)	+	3.14 (.025)	+	4.01 (.008)	+	3.45 (.016)	+	2.92 (.033)	+	3.02 (.030)
F-test: current and lagged political polarization (p-value)	-	2.28 (.034)	-	2.05 (.057)	-	2.24 (.038)	-	2.40 (.027)	-	1.94 (.071)	-	1.77 (.104)
F-test: current and lagged socio-demographic variables (p-value)		4.51 (.000)		3.59 (.000)		4.17 (.000)		3.40 (.000)		4.78 (.000)		4.48 (.000)
F-test: current and lagged fiscal debt and scale (p-value)		2.71 (.013)		3.73 (.000)		1.70 (.118)		3.30 (.006)		2.39 (.027)		3.97 (.001)
F-test: current and lagged fiscal surplus (p-value)	+	6.49 (.000)	+	6.84 (.000)	+	5.81 (.001)	+	6.90 (.000)	+	7.16 (.000)	+	8.03 (.000)
F-test: current and lagged fiscal deficit (p-value)	+	4.60 (.003)	+	1.72 (.162)	+	4.68 (.003)	+	1.54 (.204)	+	4.82 (.003)	+	1.57 (.196)
Revenue measure	Gen. revenue		Expected/ Unexpected		Gen. revenue		Expected/ Unexpected		Gen. revenue		Expected/ Unexpected	
number of observations	912		706		912		706		936		706	
Years	1977-99		1976-98		1977-99		1976-98		1977-99		1976-98	

All regressions include a constant term and state fixed effects and year indicators. Calculations based on robust standard errors.

Divided government codes split legislatures as contributing to divided government.

Where applicable, +/- denotes sign of variable(s). For the case of lagged variables, this is the sign of the sum of all coefficients.

Table 3: The Interaction of Fiscal Policy and Divided Government on Fiscal Transparency

Dependent variable: Index percentage score = index value / # available indicators

Political competition measure		Divided government All states				Divided government States with changes		
t-test: Lagged dependent variable, 4 years (p-value)	+	13.99 (.000)	+	10.54 (.000)	+	11.37 (.000)	+	8.80 (.000)
F-test: current and lagged political competition (p-value)	+	6.90 (.000)	+	6.96 (.000)	+	8.15 (.000)	+	7.87 (.000)
F-test: current and lagged political polarization (p-value)	+/-	3.39 (.003)	+/-	2.85 (.010)	+/-	1.20 (.303)	+/-	1.11 (.357)
F-test: current and lagged socio- demographic variables (p-value)		4.39 (.000)		4.81 (.000)		4.20 (.000)		3.74 (.000)
F-test: current and lagged fiscal debt and scale (p-value)		2.27 (.035)		2.95 (.002)		2.81 (.010)		3.51 (.001)
F-test: current and lagged fiscal imbalance (p-value)	+	14.15 (.000)	+	10.50 (.000)	+	17.43 (.000)	+	13.12 (.000)
F-test: interactions of current and lagged divided government and fiscal imbalance (p-value)	-	5.26 (.001)	+	4.29 (.005)	+	7.00 (.000)	+	5.34 (.001)
Revenue measure		Gen. revenue		Expected/ Unexpected		Gen. revenue		Expected/ Unexpected
number of observations		1127		865		912		706
Years		1976-98		1976-98		1977-99		1976-98

All regressions include a constant term and state fixed effects and year indicators. Calculations based on robust standard errors.

Divided government codes split legislatures as contributing to divided government.

Where applicable, +/- denotes sign of variable(s). For the case of lagged variables, this is the sign of the sum of all coefficients.

Table 4: The Causes of Expenditure, Revenue and General Transparency

Political competition measure	Expenditure transparency			Revenue transparency			General fiscal transparency		
	Div gov	Leg comp	Gub comp	Div gov	Leg comp	Gub comp	Div gov	Leg comp	Gub comp
t-test: Lagged dependent variable, 4 years (p-value)	+ 7.97 (.000)	+ 8.16 (.000)	+ 7.67 (.000)	+ 5.65 (.000)	+ 6.01 (.000)	+ 5.61 (.000)	+ 12.02 (.000)	+ 11.72 (.000)	+ 11.80 (.000)
F-test: current and lagged political competition (p-value)	+ 1.76 (.153)	+ 2.07 (.103)	+ 4.11 (.007)	+ 3.05 (.028)	+ 2.30 (.076)	- 2.06 (.104)	+ 4.25 (.006)	- 1.74 (.158)	+ 1.67 (.172)
F-test: current and lagged political polarization (p-value)	+ 1.53 (.166)	+ 1.65 (.130)	+ 1.40 (.212)	+/- 1.03 (.406)	+/- 1.29 (.257)	+ 1.10 (.359)	- 4.31 (.000)	- 3.46 (.002)	- 3.50 (.002)
F-test: current and lagged socio-demographic variables (p-value)	6.84 (.000)	6.60 (.000)	7.71 (.000)	2.57 (.001)	2.65 (.001)	2.73 (.000)	2.23 (.005)	2.30 (.003)	2.22 (.005)
F-test: current and lagged fiscal debt and scale (p-value)	3.27 (.001)	2.97 (.002)	3.36 (.001)	1.21 (.288)	1.22 (.277)	1.19 (.300)	2.50 (.008)	2.99 (.002)	2.98 (.002)
F-test: current and lagged fiscal surplus (p-value)	+ 10.52 (.000)	+ 10.35 (.000)	+ 11.53 (.000)	+ 0.15 (.928)	+ 0.16 (.923)	+ 0.15 (.933)	- 0.71 (.546)	- 0.72 (.542)	- 0.69 (.556)
F-test: current and lagged fiscal deficit (p-value)	+ 9.05 (.000)	+ 8.85 (.000)	+ 8.92 (.000)	- 0.52 (.672)	- 0.49 (.688)	- 0.50 (.685)	- 1.91 (.313)	- 1.44 (.229)	- 1.61 (.185)
number of observations	865	865	865	865	865	865	865	865	865
Years	1976-98	1976-98	1976-98	1976-98	1976-98	1976-98	1976-98	1976-98	1976-98

All regressions include a constant term and state fixed effects and year indicators. Calculations based on robust standard errors.

Divided government codes split legislatures as contributing to divided government.

Where applicable, +/- denotes sign of variable(s). For the case of lagged variables, this is the sign of the sum of all coefficients.